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Fruit and Vegetable
Division

Processed Products
Branch

Grading Manual for Canned Apples

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PREFACE

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These instructions are designed primarily for Processed Fruit and Vegetable Inspectors of the U.S. Department of Agriculture. They are not intended to be a comprehensive treatise on

the subject but give background information and guidelines to assist in the uniform application and interpretation of USDA grade standards and other similar specifications.

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INSTRUCTIONS FOR INSPECTION OF CANNED APPLES

DRAINED WEIGHT

Canned apples are usually packed without a packing medium. Some processors may add a slight amount of water, but the liquid is usually absorbed by the fruit tissue. There is usually little free liquid in the container, however, drained weight is required by the U.S. standards. The net weight and drained weight are often approximately the same. A heavy pack of canned apples with a drained weight of approximately 105 ounces and an extra heavy pack of approximate 110 ounces may be processed for special buyers. Size of the slice will affect the drained weight. Large slices usually have lower drained weight.

QUALITY FACTORS

Similar varietal characteristics.

Single varieties of apples are usually selected for canning. Blending of varieties, as in applesauce, usually is not practiced. Variation of color, texture, and flavor within a single variety or similar varieties is normal. Only if the appearance and flavor are seriously affected should the sample unit be graded Substandard.

Flavor.

Normal flavor and odor are required for all grades above Substandard. In evaluating flavor and odor, consider the variety of apple used. A good, normal flavor and odor for a given variety of apple may be noticeably different from other varieties. When optional ingredients (spice, salt, antioxidant, sweetener, etc.) are used, the flavor and odor evaluation must consider correct usage of these ingredients. Metal containers may, occasionally, impart an objectionable metallic flavor to canned apples.

Color.

Apples may range from an almost pure white to yellow or orange in color. Some apples have a greenish cast. Apples within each container should indicate similar varieties. Containers within a lot may contain different varietal colors.

Grade A Bright, reasonably uniform, free from immature or overripe fruit and correctly processed.

Grade C May be dull, variable in color, slightly brown, slightly pink, or slightly gray. Slight internal discoloration is permitted.

Uniformity of Size.

Consider the average size of the units in the sample unit. Units that deviate from the average, such as large units, small units, or both large and small units, may be removed from the sample unit down to the required percentage, before determining uniformity of thickness.

Defects.

Exact weight sample units in 16-ounce multiples from large containers make for easier calculation.

1. Harmless extraneous material.

Grade A Allow only a very slight amount.

Grade C The EVM may be noticeable, but does not seriously affect the appearance or eating quality.

Substandard Seriously affects the appearance or eating quality.

2. Damaged.

Damaged includes the kinds of defects that would most likely not be removed before using the product. Slight flecks of corky tissue, very slight bruises and flecks of peel which are inconspicuous are not considered.

3. Seriously damaged.

Seriously damaged includes the kinds of defects that would likely be removed before using the product. Worm holes, unsightly calyx ends, large or dark bruises, dark internal discoloration, and other serious discolorations would fall in this group.

4. **Carpel tissue.**

Carpel tissue is the hard, tough tissue which surrounds the seed cavity. Pinch out the carpel tissue and rub it between the thumb and fingers until softer tissue is separated. The total area of carpel tissue can be fairly accurately measured by placing the carpel side by side on a plastic area measurement aid. Wash-up is easy.

Character.

Buyers usually specify the character they prefer. Some buyers prefer a hard slice, others a slightly firm to firm slice. Canned apples are not a dessert pack. They are mainly used in baking. The more desirable character consists of slices that are firm enough to stand baking without disintegration, but are not unnaturally hard.

Well defined edges to apple slices are an indication of good character. Rounded edges and/or slices covered with partially disintegrated apple tissue (applesauce) is an indication of lower quality.

In determining the percentage of "mushy" apples, if a large number of slices are covered with disintegrated apple tissue, this material should be removed and weighed or estimated and included with the total mushy apple material. There may be a direct relationship between the amount of 'mushy" apple material and the drained weight of apple material. Heavier packs tend to mush more. However, some buyers are willing to accept the extra amount of mushy material and ask for the heavier pack.